Tularemia

Agent: *Francisella tularensis* (bacteria)
Mode of Transmission: The most common form of tularemia reported in the United States occurs following a tick or deer fly bite or after handling of an infected animal. Ticks found in Virginia that can transmit tularemia include the American dog tick and the lone star tick. Hunters can contract the disease while cleaning infected game or when eating infected meat that is raw or undercooked. Humans can also become infected by drinking water contaminated by infected animals, by contaminating their eyes with infected material, or by breathing *F. tularensis* spores from the dried carcasses or pelts of animals that died from tularemia. Cases have also been associated with cat and hamster bites. Because *F. tularensis* is highly infectious when grown in culture, laboratorians who work with the bacteria can became infected with the bacteria through wound contamination, or inhalation of aerosolized material. The bacteria are not transmitted directly from person to person.
Signs/Symptoms: Symptoms vary depending on the mode of transmission, but usually include sudden onset of high fever, chills, fatigue, general body aches, headache and nausea. An ulcer can occur at the site of infectious bites or wounds, and proximate lymph nodes can become swollen and painful. Ingestion can result in painful pharyngitis, abdominal pain, diarrhea and vomiting. Pulmonary infection can result in pneumonia and requires prompt identification and treatment to prevent development of life-threatening illness.
Prevention: Preventive measures include minimizing the risk of tick bites by the use of both appropriate dress and insect repellants when recreating or working in tick habitats, and avoiding the consumption of untreated water. Impervious protective gloves should be used when skinning rabbits and other wild game. Utensils used for preparing meat from game should not be used to prepare other food items. Undercooked meat should not be consumed. Mowing over dead animals should be avoided to lower the risk of aerosolizing infectious particles.
Other Important Information: Wild animals are the reservoir for *F. tularensis* with rabbits, hares, and rodents being especially susceptible to infection. Tularemia is classified as a potential bioweapon because its spores are relatively easy to disseminate as a breathable aerosol or as a food and water contaminant. Most tularemia infections can be successfully treated with antibiotics.

In 2016, two cases (one confirmed and one probable) of tularemia were reported in Virginia. The source of infection for the confirmed case was thought to be a fly or a tick bite. A source of infection for the probable case could not be determined. Both cases were reported in adults from the central region. The five-year average number of tularemia cases in Virginia is 2.8 cases per year.